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NEW NOMENCLATURE FOR SOVIET RADIO TUBES (PROMULGATED BY GOST 5461-50, EFFECTIVE 1 MAY 1951)

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Every type of vacuum tube has a conventional designation given to it, consisting in general of letters and figures in a definite order, or, less frequently, of figures only. As the letters used in the name are often the first letters of words characterizing the tube as to purpose or properties, they are more informative than figures alone.

The Soviet system of naming tubes has always been based on this principle. The very first receiving tube designed in 1918 in the Nizhniy Novgorod Radio Laboratory under M. A. Bonch-Bruyevich, was called the PR-1 from "pustotnoye rele" (vacuum relay), design No 1. The R-5 designation of the receiving tube produced in 1922 by the "Elektrovakuum" Plant in Petrograd meant relay, design No 5. A new tube with a thoriated cathode produced in 1923 drew only one tenth the filament current of the R-5, and thus was called the Mikro tube. A double-grid tube which was equally economical as to filament current was called the MDS, i.e., "mikro dvukhsetochnaya" (micro double-grid). The first low-power kenotron was designated the K2-T, meaning a kenotron with two plates and a thoriated cathode.

By 1929 the number of tube types had increased so greatly that it was necessary to systematize their classification. A letter-number system was adopted which remained to force until recently. The first letter gave the category of the tube: P -- priyemnaya (receiving); U -- usilitel'naya (amplifying); S -- spetsial'naya (special); V -- vypryamitel'naya (rectifier); T -- translyatsionnaya (wired radio); N -- nizkochastotnaya (audo frequency). The second letter described the cathode: T -- torirovannyy (thoriated); K -- karbidirovannyy (carbide-coated); O -- oksidirovannyy (oxidized). Numbers added to the letters distinguished tubes of the same category by their factory design numbers. In accordance with this system, the R-5, Micro, MDS, PT-19 and K2-T became the P-7, PT-2, ST-6, ST-19 and VT-14, respectively.

The defects of this system, however, were that the same tube could be put under two headings (particularly "receiving" and "amplifying"), too many tubes were classified as "special," and it was impossible to tell whether the tube was intended for a battery receiver or whether it had an indirectly heated cathode.

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In 1937 the vacuum tube industry began mass-production of new tube types, such as the metal tubes 6A8, 6G7, 6K7, 6L7, 6F5, 6F6, 6C5, 6X6, and 5Z4. It also produced a glass 6E5 tuning indicator tube. Somewhat later came the metal 6L6 and the glass 5Z4 and 6L6 tubes. A better and shorter system was employed in naming these tubes, but it was not always consistent. For example, F was used both for the high-μ triode 6F5 and for the af pentode power amplifier 6F6. The figure in the third place originally denoted the number of electrodes brought out (including the filament and the envelope). This complicated the naming of new tubes with the same number of electrodes as earlier tubes.

In 1940, a plan was drawn up to eliminate this confusion. The first figure gave the filament voltage in round numbers. The letter in the second place indicated the main purpose or design of the tube. The figure in the third place served only to differentiate tubes with the same purpose and design. To distinguish the external form of the tubes (conventional metal tubes excepted), another letter was added: S (steklyannaya) for glass tubes of ordinary size; M (malogabaritnaya) for miniature glass tubes; Zh (zholud') for glass "acorn" tubes; and N (odnotsokol'naya metallicheskaya) for single-ended metal tubes. Under this plan, some tubes (particularly the miniature series developed in 1938) should have been renamed, e.g., the SB-242 should have become the 2A1M; the SO-241, the 2K1M; etc. But people did not become familiar with the new names because many plants continued to produce tubes with the previous type designations on envelopes, and only the later miniature tubes (2K2M, 2Zh2M) were renamed.

During recent years the nomenclature of electron tubes has been greatly enlarged despite the elimination of some obsolete types. An efficient classification was needed for them and therefore a new system with four elements was devised last year which included both electron and ionic tubes. It was based on the 1940 system. The new system is given below.

First Member of Type Designation

Group of Vacuum Tubes	Conventional Symbol
Long- and short-wave transmitting tubes (up to 25 Mc)	GK
Ultrashort-wave transmitting tubes (between 25 and 600 Mc)	GU
Centrimeter transmitting tubes (above 600 Mc)	GS
Modulators	GM
Kenotrons	V
Voltage regulators	SG
Gas-filled thyratrons	TG
Mercury-vapor thyratrons	TR
Gas-filled rectifiers	GG
Mercury-vapor rectifiers	GR
Phototubes and electron-multiplier phototubes	F
Receiving tubes and kenotrons in the receiving tube category	Figure showing filament voltage (in round numbers)
Cathode-ray tubes and kinescopes	Figure giving diameter or diagonal of screen in cm

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Second Member of Type Designation

Group of Vacuum Tubes	Conventional Symbol
Diodes	D
Duodiodes	Kh
Triodes	S
Tetrodes	E
Output pentodes and beam tetrodes	P
Remote cut-off pentodes and beam tetrodes	K
Sharp cut-off pentodes and beam tetrodes	Zh
Frequency converters with two control grids	A
Triodes with one or two diodes	G
Pentodes with one or two diodes	B
Twin triodes	N
Triode-pentodes	F
Optical tuning indicators	Ye
Kenotrons in the receiving tube category	Ts
Gas-filled rectifiers	Figure giving the serial type number
Thyratrons	
Kenotrons	
Cathode-ray tubes and kinescopes with electrostatic focusing	LO
Cathode-ray tubes with electromagnetic focusing	LM
Kinescopes with electromagnetic focusing	LK
Phototubes and electron-multiplier phototubes with cesium cathodes	Ts
Phototubes and electron-multiplier phototubes with antimony-cesium cathodes	S

NOTE: Transmitting tubes, modulators, and voltage regulators have no second members in their type designation.

Third Member of Type Designation

Group of Vacuum Tubes	Conventional Symbol
Transmitting tubes for all ranges	Figures giving the serial type number
Modulators	
Receiving tubes and kenotrons in the receiving tube category	
Voltage regulators	
Phototubes and electron-multiplier phototubes	

NOTE: Gas-filled rectifiers, thyratrons, and kenotrons have no third member in their type designation.

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Fourth Member of Type Designation

Group of Vacuum Tubes	Conventional Symbol
1. Transmitting tubes for all ranges and and modulators	Letter indicating type of cooling, if any: Water-cooled — A Air-cooled — B
2. Cathode-ray tubes and kinescopes	Letter giving type of luminescence of the fluorescent screen: White — B Blue — S Green — V Yellowish-green — Zh Long-persistence — P Short-persistence — K

NOTE: In certain cases the fourth member of the type designation may be omitted.

3. Phototubes and electron-multiplier phototubes	V
4. Phototubes and electron-multiplier phototubes, gas-filled	G
5. Thyratrons, gas-filled rectifiers, and kenotrons	Fractions, the numerator denoting the average value of the current in amps, and the denominator, the maximum inverse peak voltage in kv
6. Receiving tubes and kenotrons and voltage regulators in the receiving tube category	Letter showing to which series the tube belongs: Tubes with metal envelopes — No symbol Tubes with glass envelopes — S Acorn-type tubes — Zh Tubes 10 mm in diam — B Tubes 6 mm in diam — A Tubes with a loktal base — L Miniature tubes — P Disk-seal tubes — D

NOTE: If any member, except the last, is lacking in a type designation, a dash will be put in its place.

The Ministry of the Communications Equipment Industry determines the type designations of mass-produced or serially produced vacuum tubes without regard for the manufacturer.

Examples of Type Designations

1.	Frequency converter with two control grids, filament voltage 1.2 v, first of its type, miniature	1A1P
2.	Pentode, filament voltage 6.3 v, remote cut-off, seventh of its type, with metal envelope	6K7
3.	Same as (2) with glass envelope	6K7S
4.	Beam tetrode, filament voltage 6.3 v, first of its type, miniature	6P1P
5.	Transmitting tube, frequency up to 25 Mc, natural cooling, fourth of its type	GK-4
6.	Transmitting tube, frequency 25-600 Mc, natural cooling second of its type	GU-2
7.	Phototube with cesium cathode, second of its type, vacuum	FTs2V
8.	Phototube, antimony-cesium cathode, third of its type, gas-filled	FS3G
9.	Cathode-ray tube, screen diameter 13 cm, electrostatic focusing, seventh of its type	13L07
10.	Kinescope [picture tube], screen diameter 30.5 cm, electromagnetic focusing first of its type, white screen	13LK1B

The new system of designating vacuum tubes was drafted by the Ministry of the Communications Equipment Industry and approved by the All-Union Committee on Standards as a State All-Union Standard--GOST 5461-50.

A table of changes in compliance with this GOST is given below.

New Type Designations for the Most Commonly Used Electron and Ionic Tubes (GOST 5461-50)

Old Type	GOST Type	Old Type	GOST Type
Duodiodes		Output Pentodes and Beam Tetrodes	
6Kh6M	6Kh6S		
2Kh1	2Kh1L	30P1M	30P1S
		12A6	12P4S
Triodes		6V6	6P6S
		6P3	6P3S
955	6S1Zh	6AG7	6P9
9002	6S1P	6P7	6P7S
2A3	2S4S	507	1P2B
6B4	6S4S		
6J5	6S2S		

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Old Type	GOST Type
Sharp Cut-Off Pentodes	
954	6Zh1Zh
6Zh13	6Zh13L
6SH7	6Zh3
6J7	6Zh7
6SJ7	6Zh8
12SJ7	12Zh8
6AC7	6Zh4
6AZh5*	6Zh3P
Z-62-D	6Zh6S
505	06P2B
Remote Cut-Off Pentodes	
956	6K1Zh
6K9M	6K9S
6SK7	6K3
6SG7	6K4
12SG7	12K4
9003	6K1P
6BA6 (L-104)	6K2P
12SK7	12K3
Frequency Convertors	
6SA7	6A7
6A10	6A105
L-99 (6BE6)	6A2P
Triodes With 1 or 2 Diodes	
6SQ7	6G2
6SR7	6G1
12SQ7	12G2
12SR7	12G1
Pentodes With 1 or 2 Diodes	
6B8M	6B8S
L-100	6B2P
Twin Triodes	
6N10M	6N10S
12N10M	12N10S
12N11M	12N11S
6N15 (6J6)	6N15P
6N8M	6N8S
6N9M	6N9S
1-N-1	1N3S
6N11	6N5S

* [Possibly a Soviet modification of US tubes 6AG5 or 6AJ5?]

Old Type	GOST Type
Tuning Indicators	
6E5	6Ye5S
Low-Power Kenotrons	
4D2 (4Ts1M)	4Ts6S
2X2 (879)	2Ts2S
1Ts1	1Ts1S
5U4C	5Ts3S
6X5S	6Ts5S
6X4P	6Ts4P
1V3/8016 (1V02)	1Ts7S
Modulators	
M-456 (UB 180)	GM-57
M-470	GM-70
M-600	GM-60
M-1000	GM-100
M-451	GM-51A
Low- and Medium-Power Transmitting Tubes	
GK-300	GU-8
832	GU-32
829	GU-29
813	GU-13
P-50	GU-50
G-471	GU-71
827-P	GU-27B
Voltage Regulators	
75S5-30	SG2S
105S5	SG3S
150S5-30	SG4S
Cathode-Ray Tubes	
LK-715	18LK15
23LK1B	23LK1B
30LK1B	31LK1B
Thyratrons and Gas-Filled Rectifiers	
TG-884	TG1-0.1/0.3
TG-2050	TG1-1.0/1.3
VG-0.25/1500	GR1-0.25/1.5
VG-1.5/5000	GG1-0.5/5

NOTE: For low-power receiving, modulating, transmitting, and cathode-ray tubes not included in the table, the types have not been changed.

The new marking will be put in force beginning 1 May 1951.

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